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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,580	07/11/2001	Gonzalo Wills	2500.370	4799

7590 11/28/2005

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EXAMINER
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PRITCHETT, JOSHUA L

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 11/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/901,580

Applicant(s)

WILLS ET AL.

Examiner

Joshua L. Pritchett

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 and 28-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10, 12, 13, 20-23 and 28-31 is/are rejected.
- 7) ☐ Claim(s) 8, 9, 11 and 14-19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This action is in response to Request for Continued Examination filed September 23, 2005 and Amendment filed August 29, 2005. Claim 1 has been amended, claims 24-27 have been cancelled and claims 28-31 have been added as requested by the applicant.

#### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-7, 10, 12, 13, 20-23 and 28-31 rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3, 10 and 17 of U.S. Patent No. 6,711,311 in view of Bergmann (US 5,729,377).

Regarding claims 1, 4-6, 21-23, 28, 30 and 31, Patent 6,711,311 claims an isolated polarizing optical beam splitter/combiner comprising a first port for launching a beam of light into the splitter/combiner when operating as a splitter (claim 1), and for outputting a combined beam of light from the splitter/combiner when operating as a combiner (claim 17); second and third spaced apart ports for launching orthogonally polarized beam of light into the splitter/combiner for combining and outputting the first port when operating as a combiner (claim 17), and for outputting orthogonally polarized beams of light, which were input together at the first port, when operating as a splitter (claim 1); a first polarization beam splitter optically coupled to the first port, oriented to provide different optical paths for two orthogonally polarized beams of light (claim 1); a second polarization dependent beam steering means optically coupled to the second and third ports, oriented to provide different optical paths for two orthogonally polarized beams of light (claim 1). Patent 6,711,311 lacks reference to a nonreciprocal rotator. Bergmann teaches the use of a nonreciprocal rotator in a polarization device for rotating the polarization in one direction while leaving the polarization with no cumulative effect in the other direction (col. 3 lines 46-64). Bergmann teaches the use of a Faraday rotator and a halfwave plate to create the nonreciprocal rotator (col. 3 lines 44-64). Bergmann further teaches the birefringent elements parallel to each other (Fig. 3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Patent 6,711,311 include the nonreciprocal rotator as taught by Bergmann for the purpose of combining the two polarization inputs from the second and third port to the first port in their original polarization state to better protect the signal integrity.

Regarding claim 2, Patent 6,711,311 claims the first polarization beam splitter element and the second polarization beam steering element comprise a first and second birefringent element (claim 1).

Regarding claim 3, Patent 6,711,311 teaches the first and second birefringent elements are located in object space or image space (claim 1).

Regarding claim 7, Patent 6,711,311 claims the first and second birefringent elements have rotational axis that are antiparallel to each other (claim 1).

Regarding claim 10, Patent 6,711,311 claims coupling in a transmission direction between the optical path of the first birefringent element and the second birefringent element (claim 1).

Regarding claims 12 and 29, Patent 6,711,311 claims the optical path length of the two orthogonally polarized beams of light passing through the first and second birefringent elements have substantially the same optical path length (claim 3).

Regarding claim 13, Patent 6,711,311 teaches the first and second birefringent elements are substantially of a same optical length (claim 3).

Regarding claim 20, Patent 6,711,311 claims the birefringent elements have axis disposed orthogonally to each other (claim 2).

#### *Allowable Subject Matter*

Claims 1-23 and 28-31 would be allowed if the double patenting rejection were overcome.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 1, 28 and 31, the prior art fails to teach or suggest an isolated polarizing optical beam splitter/combiner comprising a first port for launching a beam of light into the splitter/combiner when operating as a splitter, and for outputting a combined beam of light from the splitter/combiner when operating as a combiner; second and third spaced apart ports for launching orthogonally polarized beam of light into the splitter/combiner for combining and outputting the first port when operating as a combiner, and for outputting orthogonally polarized beams of light, which were input together at the first port, when operating as a splitter; a first polarization beam splitter optically coupled to the first port, oriented to provide different optical paths for two orthogonally polarized beams of light; a second polarization dependent beam steering means optically coupled to the second and third ports, oriented to provide different optical paths for two orthogonally polarized beams of light; and a nonreciprocal rotator capable of rotating the polarization of a light beam in one direction but having no cumulative effect in the other direction.

The remaining claims depend from claims 1 and 28 and are allowable for the same reasons.

Claims 8, 9, 11 and 14-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 8, the prior art fails to teach or suggest the birefringent elements oriented for maximum walk-off between the different optical paths.

Regarding claim 9, the prior art fails to teach or suggest the first and second birefringent elements oriented 45-degrees from each other.

Regarding claim 11, the prior art fails to teach the nonreciprocal rotator includes a pair of aspherical lenses for collimating beams

Regarding claim 14, the prior art fails to teach a third birefringent element

Regarding claim 16, the prior art fails to teach the birefringent elements having parallel wedge surfaces.

The remaining claims depend from claims 14 and 16 and are allowable for the same reasons.

### *Conclusion*

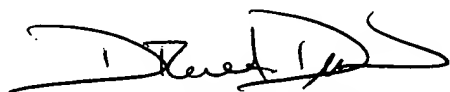
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L. Pritchett whose telephone number is 571-272-2318. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A. Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2872

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLP *JP*



**DREW A. DUNN**  
**SUPERVISORY PATENT EXAMINER**